APPENDIX D:

SOIL AND WATER BEST MANAGEMENT PRACTICES

Implementation of the Best Management Practices will be accomplished through construction activities completed by the permittee and the Forest Service. Monitoring of the soil and water BMP's will be done through contract administration and the AOI (the AOI will specify what pastures can be used based on the structures completed within the pastures). Additional required monitoring of riparina areas will be accomplished by utilization measurements within riparian area key areas as designated in MSO monitoring.

Best Management Practices Common To All Action Alternatives

Maintain current riparian meadow exclosures at Upper and Lower Buck Springs, Merritt Draw, and Houston Draw to protect approximately 84 acres of meadow.

Best Management Practices Common to the Alternative C

a) Eliminate access to Leonard Canyon in the Dines Pasture with 1.6 miles of fence.

b) Eliminate livestock access to riparian areas and spinedace habitat in the Knolls Pasture by constructing 0.8 miles of fence along Leonard Canyon, 3.7 miles of fence along Buck Springs Canyon, and 0.3 miles of fence with cattleguard to exclude livestock from West Leonard Canyon and the southern 1/2 of the Knolls Pasture.

c) Build approximately 0.25 mile of fence in the McClintock Pasture and add one cattleguard to connect the Upper and Lower Buck Springs riparian pastures. Construct one new earthen tank in McClintock Pasture to substitute for access to water in Buck Springs Canyon.

d) Manage grazing in meadows to achieve sponge effect, improve vegetative ground cover and bank stability, and improve flow regimes using a combination of herding, deferred grazing, rest-rotation, and total exclusion. Establish livestock exclosures to promote formation of meadow sponge effect in Holder Meadow (130 ac), East Bear Meadow (85 ac), West Bear Meadow (110 ac), Upper Barbershop (1000 ac), and Houston Draw (335 ac), McClintock Springs Meadow (90), and Bill McClintock Meadow (150 ac). Acres are exclosure acres, not meadow acres. Use exclosures to monitor forage use by livestock and elk. Construct a small sucker rod exclosure around Fred Haught Springs (7 ac).

e) Use herding as a supplemental tool to control livestock movements and to keep them out of sensitive riparian areas, sensitive drainages, and headwater meadows.

Best Management Practices Common to Alternative D and K

a) Eliminate access to Leonard Canyon in the Dines Pasture with 1.6 miles of fence.

b) Eliminate livestock access to spinedace habitat in the Knolls Pasture by constructing 0.8 miles of fence along Leonard Canyon, 1.9 miles of fence north of Buck Springs Canyon, and 0.4 miles of fence adjacent to Leonard Canyon downstream of Knoll Lake**.** Use herding to keep livestock out of the southern 1/2 of the pasture, south of W. Leonard Canyon. If herding of livestock is successful in controlling livestock without fences, and adequate forage is available, the southern 1/2 of Knolls Pasture may be used in the future.

c) Construct a drift fence in South Battleground Pasture to funnel livestock away from General springs Cabin. Construct a temporary electric fence at General Springs Cabin to keep livestock away from sensitive areas, when livestock are in the South Battleground Pasture.

d) Construct drift fences at entry trails to meadows to reduce access by livestock at West Bear Meadow, and Upper Barbershop Canyon. Construct livestock exclosures at Holder Meadow (130 ac), upper Houston Draw (160 ac), and Bill McClintock Meadow (150 ac). Construct a 0.1 acre pipe and sucker rod exclosure around Aspen Springs.

e) Use cowboys and dogs to "herd" the cattle in one or more units, as a tool to control livestock movements and to keep them out of sensitive riparian areas, sensitive drainages, and headwater meadows. Move the livestock as needed to avoid sensitive areas, limit utilization on individual plants, and obtain more even grazing patterns. However, livestock may pass through riparian areas and meadows if needed to achieve herding objectives.

Best Management Practices Common to Alternative E

a) Construct a drift fence along Yeager Canyon in Forest Service Pasture (0.3 mile).

b) Eliminate access to Leonard Canyon in the Dines Pasture with 1.6 miles of fence.

c) Construct a 3.2 mi. fence along south side of East Clear Creek in McCarty Pasture to control livestock access; tie the fence into Jones Crossing Fence. Reconstruct the north fence along the boundary of McCarty Pasture that serves as a lane to access the northern portion of North Battleground Pasture north of the Reservoir.

d) Construct an exclosure around meadow system in southwest portion of the South Battleground pasture (1.8 miles), with two cattleguards.

e) Construct a drift fence to funnel livestock away from General Springs (0.4 mile). Construct a temporary electric fence at General Springs Cabin to keep livestock away from sensitive areas, when livestock are in the South Battleground Pasture.

f) Construct a division fence in the South Pinchot Pasture from East Bear Canyon to the riparian pasture at Merritt, to allow use of the northern portion of the pasture.

The portion south of this fence, and between Bear Canyon and East Bear Canyon will not be used by livestock.

g) Establish livestock exclosures to promote formation of meadow sponge effect around Fred Haught Springs (7 ac). Use exclosures to monitor forage use by livestock. Construct sucker road exclosures around Pinchot and Aspen Springs. Build 0.8 miles of fence from aspen Pasture to Bear Canyon to create a small exclosure in Houston Draw. Construct a livestock exclosure around upper Houston Draw (2.4 miles).

h) Movement of livestock between pastures require long drives using fences, topography, and riders to contain livestock. Drives would not take place in areas with high risk meadows, and generally would take place along a North Route. Temporary electric fence would be used to exclude East Clear Creek and traffic control measures would be required.

Best Management Practices Common to Alternative F

a) Eliminate access to Leonard Canyon in the Dines Pasture with 1.6 miles of fence. Close portion of 9713G road.

b) Eliminate livestock access to riparian areas and spinedace habitat in the Knolls Pasture by constructing 0.8 miles of fence along Leonard Canyon, 3.8 miles of fence along Buck Springs Canyon, and 0.3 miles of fence with cattleguard (FR161B) to exclude livestock from West Leonard Canyon and the southern 1/2 of the Knolls Pasture. Close 9714N Road.

c) Build approximately 0.25 mile of fence and add one cattleguard to connect the Upper and Lower Buck Springs riparian pastures. Construct one new earthen tank in McClintock Pasture to substitute for access to water below the weir in Buck Springs Canyon.

d) Construct a 3.2 mi. fence along south side of East Clear Creek in McCarty Pasture to control livestock access; tie the fence into Jones Crossing Fence. Reconstruct and move the north boundary fence. Close 6143.

e) Construct a drift fence in South Battleground Pasture to funnel livestock away from General springs Cabin (0.2). Construct a temporary electric fence at General Springs Cabin to keep livestock away from sensitive areas, when livestock are in the South Battleground Pasture.

f) Establish livestock exclosures to promote formation of meadow sponge effect in Holder Meadow (130 ac), East Bear Meadow (85 ac), West Bear Meadow (110 ac), upper Houston Draw (335 ac), lower Houston Draw (180 ac), and Bill McClintock Meadow (150 ac). Construct drift fences at entry trails to Upper Barbershop Canyon to reduce access by livestock. Exclude livestock from Fred

Haught Springs (7 ac), Pinchot Springs (1/10 ac) and Aspen Springs (1/10 ac). Use exclosures to monitor forage use by livestock and wildlife. Close 9737R, 9714G and north end of 9714E, 9711V, 9739W, 9732Y, 9733Y, 9737Y.

n) Establish livestock exclosures to promote formation of meadow sponge effect around Fred Haught Springs (7 ac). Use exclosures to monitor forage use by livestock. Construct sucker road exclosures around Pinchot and Aspen Springs.

o) Construct a cattle exclosure around the existing elk exclosure at McClintock Spring (cattle = 90 ac, elk = 1 ac).

Best Management Practices Common to Alternative G

a) Eliminate access to Leonard Canyon in the Dines Pasture with 1.6 miles of fence.

b) Construct a 3.2 mi. fence along south side of East Clear Creek in McCarty Pasture to control livestock access; tie the fence into Jones Crossing Fence. Reconstruct the north fence along the boundary of McCarty Pasture that serves as a lane to access the northern portion of North Battleground Pasture north of the Reservoir.

c) Construct a drift fence to funnel livestock away from General Springs (0.4 mile). Construct a temporary electric fence at General Springs Cabin to keep livestock away from sensitive areas, when livestock are in the South Battleground Pasture.

d) onstruct a division fence in the South Pinchot Pasture from East Bear Canyon to the riparian pasture at Merritt, to allow use of the northern portion of the pasture. The portion south of this fence, and between Bear Canyon and East Bear Canyon would not be used by livestock.

e) Establish livestock exclosures to promote formation of meadow sponge effect around Fred Haught Springs (7 ac). Use exclosures to monitor forage use by livestock. Construct sucker road exclosures around Pinchot and Aspen Springs. Build 0.8 miles of fence from aspen Pasture to Bear Canyon to create a small exclosure in Houston Draw north of the Aspen Horse Pasture. Construct a livestock exclosure around upper Houston Draw south of the Aspen Horse Pasture (2.4 miles).